From the INTERNATIONAL BUREAU

PCT

NOTIFICATION CONCERNING SUBMISSION OR TRANSMITTAL OF PRIORITY DOCUMENT

(PCT Administrative Instructions, Section 411)

DOWNING, Michael, Philip Fry Heath & Spence The Old College

53 High Street Horley

Surrey RH6 7BN ROYAUME-UNI

RECEIVE

1 8 JAN 20 .

Date of mailing (day/month/year) 29 December 1999 (29.12.99)			
Applicant's or agent's file reference P57554D	IMPORTANT NOTIFICATION		
International application No. PCT/GB99/03724	International filing date (day/month/year) 09 November 1999 (09.11.99)		
International publication date (day/month/year) Not yet published	Priority date (day/month/year) 10 November 1998 (10.11.98)		

COLSON ENGINEERING LIMITED et al

- The applicant is hereby notified of the date of receipt (except where the letters "NR" appear in the right-hand column) by the International Bureau of the priority document(s) relating to the earlier application(s) indicated below. Unless otherwise indicated by an asterisk appearing next to a date of receipt, or by the letters "NR", in the right-hand column, the priority document concerned was submitted or transmitted to the International Bureau in compliance with Rule 17.1(a) or (b).
- 2. This updates and replaces any previously issued notification concerning submission or transmittal of priority documents.
- An asterisk(*) appearing next to a date of receipt, in the right-hand column, denotes a priority document submitted or transmitted to the International Bureau but not in compliance with Rule 17.1(a) or (b). In such a case, the attention of the applicant is directed to Rule 17.1(c) which provides that no designated Office may disregard the priority claim concerned before giving the applicant an opportunity, upon entry into the national phase, to furnish the priority document within a time limit which is reasonable under the circumstances.
- 4. The letters "NR" appearing in the right-hand column denote a priority document which was not received by the International Bureau or which the applicant did not request the receiving Office to prepare and transmit to the International Bureau, as provided by Rule 17.1(a) or (b), respectively. In such a case, the attention of the applicant is directed to Rule 17.1(c) which provides that no designated Office may disregard the priority claim concerned before giving the applicant an opportunity, upon entry into the national phase, to furnish the priority document within a time limit which is reasonable under the circumstances.

Priority date

Priority application No.

Country or regional Office or PCT receiving Office

Date of receipt of priority document

10 Nove 1998 (10.11.98)

9824532.7

GB

16 Dece 1999 (16.12.99)

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland

Authorized officer

Olivia RANAIVOJAONA

Facsimile No. (41-22) 740.14.36

Telephone No. (41-22) 338.83.38

WO WYZ/ PCT/GB99/0372-

From the INTERNATIONAL BUREAU

PCT

NOTICE INFORMING THE APPLICANT OF THE COMMUNICATION OF THE INTERNATIONAL APPLICATION TO THE DESIGNATED OFFICES

(PCT Rule 47.1(c), first sentence)

DOWNING, Michael, Philip Fry Heath & Spence The Old College

53 High Street RECEIVED 2 8 MAY 2000

Surrey RH6 7BN ROYAUME-UN

Date of mailing (day/month/year) 18 May 2000 (18.05.00)

Applicant's or agent's file reference

P57554D

International filing date (day/month/year) 09 November 1999 (09.11.99)

IMPORTANT NOTICE Priority date (day/month/year) 10 November 1998 (10.11.98)

International application No. PCT/GB99/03724

 Notice is hereby given that the International Bureau has communicated, as provided in Article 20, the international application
to the following designated Offices on the date indicated above as the date of mailing of this Notice: Applicant Notice is hereby given that the International Bureau has communicated, as provided in Article 20, the to the following designated Offices on the date indicated above as the date of mailing of this Notice:

In accordance with Rule 47.1(c), third sentence, those Offices will accept the present Notice as conclusive evidence that the communication of the international application has duly taken place on the date of mailing indicated above and no continuous communication of the international application has duly taken place on the date of mailing indicated above and no continuous communication of the international application has duly taken place on the date of mailing indicated above and no continuous conti In accordance with Rule 47.1(c), third sentence, those Offices will accept the present Notice as conclusive evidence that the communication of the international application has duly taken place on the date of mailing indicated above and no copy the communication of the international application has duly taken place on the designated Office(s).

2. The following designated Offices have waived the requirement for such a communication at this time: AE,AL,AM,AP,AT,AZ,BA,BB,BG,BR,BY,CA,CH,CU,CZ,DE,DK,EA,EE,EP,ES,FI,GB,GD,GE,GH,GM, HR,HU,ID,IL,IN,IS,KE,KG,KZ,LC,LK,LR,LS,LT,LU,LV,MD,MG,MK,MN,MW,MX,NO,NZ,OA,PL,RU,

3. Enclosed with this Notice is a copy of the international application as published by the International Bureau on

18 May 2000 (18.05.00) under No. WO 00/27479

If the applicant wishes to postpone entry into the national phase until 30 months (or later in some Offices) from the priority date, a demand for international preliminary examination must be filed with the competent International Preliminary REMINDER REGARDING CHAPTER II (Article 31(2)(a) and Rule 54.2) If the applicant wishes to postpone entry into the national phase until 30 months (or later in some Offices) from the private applicant wishes to postpone entry into the national phase until 30 months (or later in some Offices) from the private with the competent International Preliminary examination must be filed with the competent International Preliminary date, a demand for international preliminary examination the priority date. Examining Authority before the expiration of 19 months from the priority date.

Note that only an applicant who is a national or resident of a PCT Contracting State which is bound by Chapter II has the right to file a demand for international preliminary examination It is the applicant's sole responsibility to monitor the 19-month time limit.

right to file a demand for international preliminary examination.

REMINDER REGARDING ENTRY INTO THE NATIONAL PHASE (Article 22 or 39(1))

If the applicant wishes to proceed with the international application in the national phase, he must, within 20 months or 30 months, or later in some Offices, nerform the acts referred to therein before each designated or elected Office. If the applicant wishes to proceed with the international application in the **national phase**, he must, within 20 months or 30 months, or later in some Offices, perform the acts referred to therein before each designated or elected Office.

For further important information on the time limits and acts to be performed for entering the national phase, see the Annex to Form PCT/IB/301 (Notification of Receipt of Record Copy) and Volume II of the PCT Applicant's Guide. For further important information on the time limits and acts to be performed for entering the national phase, Significant information on the time limits and acts to be performed for entering the national phase, Significant information on the time limits and acts to be performed for entering the national phase, Significant information on the time limits and acts to be performed for entering the national phase, Significant information on the time limits and acts to be performed for entering the national phase, Significant information on the time limits and acts to be performed for entering the national phase, Significant information on the time limits and acts to be performed for entering the national phase, Significant information on the time limits and acts to be performed for entering the national phase, Significant information on the time limits and acts to be performed for entering the national phase, Significant information on the time limits and acts to be performed for entering the national phase in the performance of the performance the performance o

Authorized officer J. Zahra The International Bureau of WIPO 34, chemin des Colombettes Telephone No. (41-22) 338.83.38 3277237 1211 Geneva 20, Switzerland Facsimile No. (41-22) 740.14.35

PCT/GB99/03724



Continuation of Form PCT/IB/308

NOTICE INFORMING THE APPLICANT OF THE COMMUNICATION OF THE INTERNATIONAL APPLICATION TO THE DESIGNATED OFFICES

Date of mailing (day/month/year) 18 May 2000 (18.05.00)	IMPORTANT NOTICE
Applicant's or agent's file reference P57554D	International application No. PCT/GB99/03724

The applicant is hereby notified that, at the time of establishment of this Notice, the time limit under Rule 46.1 for making amendments under Article 19 has not yet expired and the International Bureau had received neither such amendments nor a declaration that the applicant does not wish to make amendments.

LATENT COOPERATION TREALY

From the INTERNATIONAL BUREAU

PCT	To:
NOTIFICATION OF ELECTION (PCT Rule 61.2)	Assistant Commissioner for Patents United States Patent and Trademark Office Box PCT Washington, D.C.20231 ETATS-UNIS D'AMERIQUE
Date of mailing (day/month/year) 19 July 2000 (19.07.00)	in its capacity as elected Office
International application No. PCT/GB99/03724	Applicant's or agent's file reference P57554D
International filing date (day/month/year) 09 November 1999 (09.11.99)	Priority date (day/month/year) 10 November 1998 (10.11.98)
Applicant READE, Charles, Osborn	
The designated Office is hereby notified of its election made In the demand filed with the International Preliminary 12 June 2000 in a notice effecting later election filed with the International Preliminary 2. The election was was not made before the expiration of 19 months from the priority of Rule 32.2(b).	y Examining Authority on: (12.06.00) national Bureau on:

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland

Authorized officer

Juan Cruz

Telephone No.: (41-22) 338.83.38

Facsimile No.: (41-22) 740.14.35

PCT

WORLD INTELLECTUAL PROPERTY ORGANIZATION International Bureau



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 7:
A62C 4/02

(11) International Publication Number: WO 00/27479

(43) International Publication Date: 18 May 2000 (18.05.00)

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PCT/GB99/03724

(22) International Filing Date:

9 November 1999 (09.11.99)

(30) Priority Data:

9824532.7

10 November 1998 (10.11.98) GB

(71) Applicant (for all designated States except US): COLSON EN-GINEERING LIMITED [GB/GB]; Unit 4, Argyle Commercial Centre, Swindon, Wiltshire SN2 6AR (GB).

(72) Inventor; and

(75) Inventor/Applicant (for US only): READE, Charles, Osborn [GB/GB]; 29 St. Swithuns Road, Kennington, Oxford OX1 SPU (GB).

(74) Agents: DOWNING, Michael, Philip et al.; Fry Heath & Spence, The Old College, 53 High Street, Horley, Surrey RH6 7BN (GB).

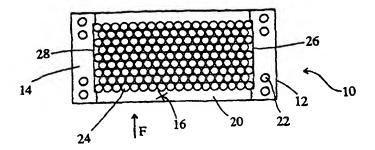
(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, RU, SE, SG, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published

With international search report.

Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.

(54) Title: FLAME ARRESTER



(57) Abstract

A flame arrester comprises a flow passage in which are disposed a plurality of generally aligned rods such that fluids flowing in the passage must pass between the rods. Rows of rods are used to construct the flame arrester element, ideally closely spaced and these present a natural surface over which air can flow with minimal flow resistance. The rods can be of any size and the gaps between them can be selected to arrest explosions due to different gases or vapours in air. The rod diameter can be altered to withstand different levels of explosion pressure, making it possible to construct both deflagration and detonation flame arresters. The rods can be made of solid material or tubes. If tubes are used these can carry cooling fluid making the arrester more effective at coping with continuous burning. Additional tubes of larger diameter and spacing can be added upstream. Rods in parallel rows can be offset with respect to the adjacent row. Suitable offset angles can vary. Examples are between 30 and 60 degrees, but this is not exhaustive. This arrester lends itself to being cleaned mechanically, simply by introducing a linear scraping device. This preferably passes over each rod to keep it clean. The scraping device can either be operated by manual effort or automatically in a variety of ways.

FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AL AM AT AU AZ BA BB BE BF BG BJ BR CCF CG CH CI CM CU CZ DE DK EE	Albania Armenia Austria ? Australia Azerbaijan Bosnia and Herzegovina Barbados Belgium ? Burkina Faso Bulgaria Benin Brazil Belarus Canada Central African Republic ? Congo Switzerland Côte d'Ivoire Cameroon China Cuba Czech Republic ? Germany Denmark ? Estonia	ES FI FR GA GB GE GH GR HU IE IL IS IT JP KE KG KP LC LI LK LR	Spain Finland France Gabon United Kingdom Georgia Ghania Guinea Greece Hungary Ireland Israel Iceland Italy Japan Kenya Kyrgyzstan Democratic People's Republic of Korea Republic of Korea Kazakstan Saint Lucia Liechtenstein Sri Lanka Liberia	LS LT LU LV MC MD MG MK ML MN MR MW MX NE NL NO NZ PL PT RO RU SD SE SG	Lesotho Lithuania Luxembourg Latvia Monaco Republic of Moldova Madagascar The former Yugoslav Republic of Macedonia Mali Mongolia Mauritania Malawi Mexico Niger Netherlands Norway New Zealand Poland Portugal Romania Russian Federation Sudan Sweden Singapore	SI SK SN SZ TD TG TJ TM TR TT UA UG US VN YU ZW	Slovenia Slovakia Senegal Swaziland Chad Togo Tajikistan Turkeenistan Turkey Trinidad and Tobago Ukraine Uganda United States of America Uzbekistan Viet Nam Yugoslavia Zimbabwe
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ATIONAL SEARCH REPORT

rnational Application No. PCT/GB 99/03724

A. CLASSIFICATION OF SUBJECT MATTER IPC 7 A62C4/02

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols) IPC 7 A62C

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUM	ENTS CONSIDERED TO BE RELEVANT	
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Х	US 2 068 421 A (LONG) 19 January 1937 (1937-01-19)	1-6,9, 10,16-18
Y	page 3, left-hand column, line 22 - line 63; figures 6,7	11-14
Y	GB 2 183 020 A (BARNES ECAS LIMITED) 28 May 1987 (1987-05-28) page 2, line 82 -page 3, line 96; figures	11-14
X	FR 526 178 A (ROLLAND) 3 October 1921 (1921-10-03)	1-6,9, 10,16
Y	page 1, line 29 -page 2, line 14; figures	11-15, 17-19
Y	US 4 307 673 A (CAUGHEY ROBERT A) 29 December 1981 (1981-12-29) column 2, line 13 -column 4, line 3; figures	11-14
	-/	

X Further documents are listed in the continuation of box C.	χ Patent family members are listed in annex.
Special categories of cited documents: A* document defining the general state of the art which is not considered to be of particular relevance.	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"E" earlier document but published on or after the international filling date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filling date but later than the priority date claimed	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such document is combination being obvious to a person skilled in the art. "&" document member of the same patent family Date of mailing of the international search report
Date of the actual completion of the international search 18 April 2000	04/05/2000
Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentiaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Triantaphillou, P

INTERATIONAL SEARCH REPORT

PCT/GB 99/03724

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT Category Citation of document, with indication where appropriate, of the relevant passages Relevant to claim N				
Category				
Y	WO 94 00197 A (CHEM MECH ENGINEERING LAB) 6 January 1994 (1994-01-06) page 5, line 36 -page 17. line 27; figures	15,17-19		
	•			



Information on patent family members

rnational Application No PCT/GB 99/03724

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 2068421	Α	19-01-1937	NONE	
GB 2183020	Α	28-05-1987	NONE	
FR 526178	Α	03-10-1921	NONE	
US 4307673	Α	29-12-1981	NONE	
WO 9400197	A	06-01-1994	AT 143820 T AU 675953 B AU 4414493 A CA 2139360 A DE 69305351 D DE 69305351 T EP 0649327 A MX 9303971 A SG 49198 A US 5415233 A	15-10-1996 27-02-1997 24-01-1994 06-01-1994 14-11-1996 28-05-1997 26-04-1995 29-04-1994 18-05-1998 16-05-1995

PATENT COOPERATION TREATY

From the INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To:

DOWNING, MICHAEL P FRY HEATH & SPENCE The Old College 53 High Street Horley, Surrey RH6 7BN GRANDE BRETAGNE PCT

NOTIFICATION OF TRANSMITTAL OF THE INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Rule 71.1)

Date of mailing

(day/month/year)

24.01.2001

IMPORTANT NOTIFICATION

Applicant's or agent's file reference

P57554D

International filing date (day/month/year)

Priority date (day/month/year) 10/11/1998

International application No. PCT/GB99/03724

og/11/1999

Applicant
COLSON ENGINEERING LIMITED et al.

and the second to the second t

- 1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
- 2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
- 3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.

4. REMINDER

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

Name and mailing address of the IPEA/

Authorized officer

Eich, M

European Patent Office D-80298 Munich

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Fax: +49 89 2399 - 4465

Tel.+49 89 2399-7578





PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's	or agent's file reference		
Applicant's or agent's file reference		FOR FURTHER ACTION	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
P57554D			Treiminary Examination Report (Form 1 Orni Example)
International application No.		International filing date (day/monti	h/year) Priority date (day/month/year)
PCT/GB	99/03724	09/11/1999	10/11/1998
Internation A62C4/0	al Patent Classification (IPC) or 2	national classification and IPC	
Applicant			
COLSON	NENGINEERING LIMITE	D et al.	
	nternational preliminary exa s transmitted to the applican		d by this International Preliminary Examining Authority
2. This	REPORT consists of a total	of 5 sheets, including this cover s	heet.
			ne description, claims and/or drawings which have
		asis for this report and/or sheets of 607 of the Administrative Instructi	containing rectifications made before this Authority ons under the PCT).
Ì		_	,
These	e annexes consist of a total	of 2 sheets.	
3. This	conort contains indications re	elating to the following items:	
3. 111151	eport contains indications re	stating to the following items.	
ł	Basis of the report		
H	☐ Priority		
III	Non-establishment of	opinion with regard to novelty, inv	ventive step and industrial applicability
IV	Lack of unity of inver		
_ v		under Article 35(2) with regard to tions suporting such statement	novelty, inventive step or industrial applicability;
l vi	☐ Certain documents of		
VII	☐ Certain defects in the	international application	
VIII	⊠ Certain observations	on the international application	
<u> </u>			
		Data of	completion of this report
Date of sub	mission of the demand	Date of	completion of this report
12/06/20	00	24.01.2	001
1	mailing address of the internation	nal Authoriz	red officer
preliminary	examining authority: European Patent Office		
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	Tel. +49 89 2399 - 0 Tx: 5236	ioo ehiiin a	Section of the sectio

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/GB99/03724

I. Basis	of the	report
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 This report has been drawn on the basis of (substitute sheets which response to an invitation under Article 14 are referred to in this report the report since they do not contain amendments (Rules 70.16 and Description, pages: 					to in this repo	ort as "originally fill		
	1-9		as originally filed					
	Cla	ims, No.:					,	
	1-18	8	as received on		14/12/2000	with letter of	08/12/2000	
	Dra	wings, sheets:						
	1/4-	-4/4	as originally filed					
 With regard to the language, all the elements marked above were available or furnishe language in which the international application was filed, unless otherwise indicated uncernished. 								
	The	ese elements were available or furnished to this Authority in the following language: , which is:						
				•			ch (under Rule 23.1(b)).	
		0 0 .	ublication of the intern	·	•			
		the language of a 55.2 and/or 55.3).		for the pui	poses of inter	national prelimina	ry examination (under Rule	÷
3.			cleotide and/or aminory examination was ca		-		tional application, the ting:	
		contained in the in	iternational application	n in writter	n form.			
		filed together with	the international appli	ication in	computer read	lable form.		
		furnished subsequ	ently to this Authority	in written	form.			
		furnished subsequ	ently to this Authority	in compu	ter readable fo	orm.		
		The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.						
		The statement that listing has been fu		rded in co	mputer reada	ble form is identic	al to the written sequence	
4.	The	amendments have	e resulted in the cance	ellation of:				
		the description,	pages:					
		the claims,	Nos.:					

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/GB99/03724

	the drawings,	sheets:
5.	·	established as if (some of) the amendments had not been made, since they have been yond the disclosure as filed (Rule 70.2(c)):
	(Any replacement sh report.)	eet containing such amendments must be referred to under item 1 and annexed to this

- 6. Additional observations, if necessary:
- V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- 1. Statement

Novelty (N) Yes: Claims 1-14.16-18

No: Claims

Inventive step (IS) Yes: Claims

No: Claims 1-14,16-18

Industrial applicability (IA) Yes: Claims 1-18

No: Claims

2. Citations and explanations see separate sheet

VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted: see separate sheet

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made: see separate sheet

Reasoned statement with regard to novelty, inventive step or industrial applicability

FR 526 178 A (figs. 1, 3) discloses a flame arrester comprising a flow passage in which is disposed a two dimensional array of adjacent section rods (29), each being generally co-aligned and arranged transverse to the flow direction, such that fluids flowing in the passage must pass between the rods.

The subject-matter of claim 1 differs from the above described in that the rods have a circular (cross) section.

This document mentions that the rods can have any polygonal shape (p. 1, I. 49-51). It is obvious for the skilled person that a circular cross section would also be possible, but would have the drawback that it reduces the surface to volume ratio. This may be less desirable if a cooling effect is to be obtained. The use of a circular cross section is an obvious choice and does not have a surprising effect.

This document also discloses the features of claims **2-6**, **8-9**. Since the document does not mention the flow direction, it is up to the skilled person to decide whether the tubes shown in fig. 3 should be down or upstream of the solid bars (claim 6). It is also likely that the flow passage is cylindrical (claim **14**).

cylinder, *noun* a solid figure of uniform cross-section generated by a straight line remaining parallel to a fixed axis and moving round a closed curve, ordinarily in a circle perpendicular to the axis (giving a *right circular cylinder*); from Chambers Dictionary

US 2 068 421 (figs. 6, 7) discloses a flame arrester comprising a flow passage in which is disposed a plurality of circular section rods (29), each being generally co-aligned and arranged transverse to the flow direction, such that fluids flowing in the passage must pass between the rods. This document discloses the features of claims **2-6**, **8-10**, **14** (cylindrical does not necessarily mean circular),**16-18**.

GB 2 183 020 A (p. 2, l. 14-26) discloses a flame arrester with a scraping device having the features mentioned in claims **11-13**. It is obvious for the skilled person to apply the teaching of this document to the device known from FR 526 178 A in order to avoid the build up of material between the rods. The shape of the scraping device would of

INTERNATIONAL PRELIMINARY International application No. PCT/GB99/03724 EXAMINATION REPORT - SEPARATE SHEET

course have to be adjusted to the flame arrester. In this respect GB 2 183 020 A suggest various possibilities (p. 2, l. 5-10). It would be obvious for the skilled person to adjust the spacing between the rod if this were required for cleaning purposes.

Re Item VII Certain defects in the international application

The independent claim should have been in the two-part form in accordance with Rule 6.3(b) PCT. Those features known in combination from FR 526 178 A being placed in a preamble (Rule 6.3(b)(i) PCT) and with the remaining features being included in a characterising part (Rule 6.3(b)(ii) PCT).

The features of the claims are not provided with reference signs placed in parentheses (Rule 6.2(b) PCT).

FR-A-2 602 428 and GB 2 183 020 A has not been discussed in the description (Rule 5.1(a)(ii) PCT).

Re Item VIII Certain observations on the international application

Claim 15 contains a reference to the drawings which is not allowable, PC-III, 4.10.